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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/469,308	12/22/1999	IK PYO HONG	K-150	4822
34610	7590	09/29/2004	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			LI, SHI K	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/469,308

**Applicant(s)**

HONG, IK PYO

**Examiner**

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,8,9 and 11-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2,4-6,8,9 and 11-13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25 March 2004 has been entered.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-2, 4-6, 8-9 and 11-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites added limitation "wherein the modulated MODEM signal is generated independently from the RF signal" at the end of the claim; claim 5 recites added limitation "wherein the first modulated MODEM signal is generate[d] independently from the RF signal" at the end of the claim; claim 9 recites added limitation "wherein the monitoring signal is generated independently from the RF signal" at the end of the claim; claim 12 recites added limitation "wherein the modulated reference signal is generated independently from the RF signal" at the end of the claim. Nowhere does the instant specification teach generating a

modulated MODEM/reference signal independent from the RF signal. That is, the newly added limitation is not supported by the specification as originally filed and is considered as new matter.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-2, 4-6, 8-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farber et al. (U.S. Patent 5,969,837) in view of Okubo et al. (U.S. Patent 5,689,355) and Javitt et al. (U.S. Patent 6,031,648).

Regarding claims 1, 5, 9 and 12, Farber et al. discloses in FIG. 2 a repeating system. FIG. 2 comprises an input combiner for combining RF signals, an amplifier for amplifying the combined RF signal, a fiberoptic transmitter 14 with RF signal at its input, an optical fiber 16 and a fiberoptic receiver 22. Farber et al. discloses the details of the fiberoptic transmitter in FIG. 3 and the details of the fiberoptic receiver in FIG. 5A. FIG. 3 comprises a 10 KHz pilot tone signal mixed with the RF signal from input combiner 12. FIG. 5A comprises a detector 85 to extract the pilot tone and control a gain of an amplifier. Farber et al. further discloses in FIG. 5B the use of a microprocessor to compare the received signal and control a gain of an amplifier. The differences between Farber et al. and the claimed invention are (a) Farber et al. does not teach to use the level of the tone signal at the transmitter as the reference level at the receiver, and (b) Farber et al. does not teach the use of a modem to modulate/demodulate gain control signal. Okubo et al. teaches in col. 6, lines 51-59 that to compensate the loss of a transmission line, the received signal should be restored to the level the same as it was sent. Okubo et al. also

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teaches in FIG. 2 and FIG. 3 the use of modem to modulate gain control signal. One of ordinary skill in the art would have been motivated to combine the teaching of Okubo et al. with the repeating system of Farber et al. because the suggestion of restoring the level to the same as it was transmitted overcomes the issue raised in col. 2, lines 34-40, i.e., it automatically adjusts signal levels regardless of variation in length of optical cables, and the use of modem shifts the signal spectrum to be compatible with the RF signals so that the mixed signal can be processed together as bandpass RF signal. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to restore a signal to the same level as it was transmitted and modulate/demodulate the gain control signal using modem, as taught by Okubo et al., in the repeating system of Farber et al. because such approach automatically adjusts signal levels regardless of variation in length of optical cables and allows the gain control signal to be conveniently processed.

The modified repeating system of Farber et al. and Okubo et al. may not clearly teach that the generation of the MODEM signal is independent from the RF signal. Javitt et al. teaches in FIG. 1 to generate at the transmitter a modulated pilot tone independent of the information signal. The pilot tone is detected at the receiver and whose power is compared with a reference signal for controlling a gain control device 150. One of ordinary skill in the art would have been motivated to combine the teaching of Javitt et al. with the modified repeating system of Farber et al. and Okubo et al. because generating pilot tone independent of the signal allows a faithful measurement of power attenuation caused by the transmission medium. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate the modulated tone signal independently of the information signal, as taught by Javitt et al., in the

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modified repeating system of Farber et al. and Okubo et al. because generating pilot tone independent of the signal allows a faithful measurement of power attenuation caused by the transmission medium.

Regarding claims 2 and 6, Farber et al. suggests in FIG. 5B the use of microprocessor 92.

Regarding claims 4 and 8, Farber et al. teaches to use the comparison result to adjust the gain of an amplifier for the RF signal.

Regarding claim 11, Farber et al. teaches in FIG. 3 to convert the combined monitoring and RF signal into an optical signal via laser diode 60 and transmit the optical signal over optical fiber 16.

Regarding claim 13, Okubo et al. teaches in FIG. 2 and FIG. 3 to use modem for modulating and demodulating signal.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-2, 4-6, 8-9 and 11-13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Effenberger (U.S. Patent 5,841,563) teaches in FIG. 9 to use pilot tone for gain control.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl



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